

TM 9-1818A

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE
ENGINE
AND ENGINE ACCESSORIES
FOR
10-TON, 6x4 TRUCK (MACK)

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AND ENGINE ACCESSORIES
FOR
10-TON, 6x4 TRUCK (MACK)**



WAR DEPARTMENT

18 April 1944

*This manual contains information on maintenance instructions from the following Quartermaster Corps, 10-series technical manuals, and together with TM 9-818 and TM 9-1818B, it supersedes them. TM 10-1197, 19 September 1941; TM 10-1421, 19 September 1941; TM 10-1545, 22 December 1942.

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TM 9-1818A, Ordnance Maintenance: Engine and Engine Accessories for 10-ton, 6 x 4 Truck (Mack), is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

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(For explanation of symbols, see FM 21-6.)

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CHAPTER 1

INTRODUCTION

1. SCOPE.

a. The instructions contained in this manual are for the information and guidance of personnel charged with the maintenance and repair of the Mack 10-ton, 6 x 4, Cargo Truck. These instructions are supplementary to field and technical manuals prepared for the using arms. This manual does not contain information which is intended primarily for the using arms, since such information is available to ordnance personnel in 100-series TM's, FM's or AR's. The 100 series manual for this vehicle is TM 9-818 which includes a list of TM's, FM's and AR's for its scope.

b. This manual contains a description of, data on, and procedure for removal, disassembly, cleaning, inspection, repair, and assembly of the engine, clutch, fuel system, and cooling and electrical systems.

c. For the removal and installation of the engine and accessories, refer to operator's manual TM 9-818.

d. For ordnance maintenance on the generator and other electrical equipment, air brake system, instruments and fire extinguisher, refer to the following pertinent technical manuals:

Generator and electrical equipment, TM 9-1825A

Air-brake system, TM 9-1827A

Speedometer and tachometer, TM 9-1829A

Fire extinguisher, TM 9-1799

2. MWO AND MAJOR UNIT ASSEMBLY REPLACEMENT RECORD.

a. **Description.** Every vehicle is supplied with a copy of A.G.O. Form No. 478 which provides a means of keeping a record of each MWO completed or major unit assembly replaced. This form includes spaces for the vehicle name and U.S.A. Registration Number, instructions for use, and information pertinent to the work accomplished. It is very important that the form be used as directed and that it remain with the vehicle until the vehicle is removed from service.

b. **Instructions for Use.** Personnel performing modifications or major unit assembly replacements must record clearly on the form a description of the work completed, and must initial the form in the columns provided. When each modification is completed, record the date, hours, and/or mileage, and MWO number. When major unit assemblies, such as engines, transmissions, transfer cases are replaced, record the date, hours, and/or mileage and nomenclature of the unit assembly. Minor repairs and minor parts and accessory replacements need not be recorded.

c. **Early Modifications.** Upon receipt by a third or fourth echelon repair facility of a vehicle for modification or repair, maintenance personnel will record the MWO numbers of modifications applied prior to the date of A.G.O. Form No. 478.

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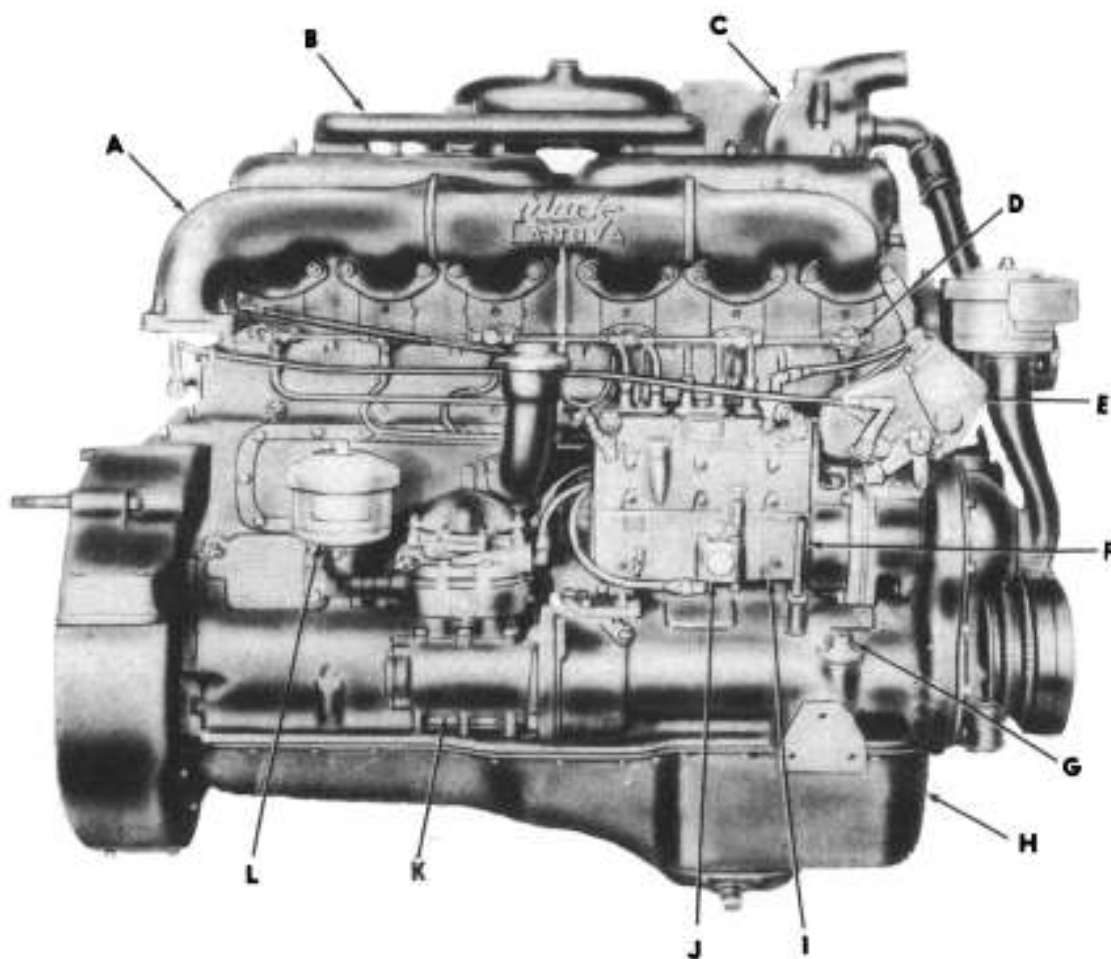
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CHAPTER 2

ENGINE

Section I

DESCRIPTION AND DATA



- | | |
|-------------------------------|-----------------------------------|
| A — EXHAUST MANIFOLD | G — TACHOMETER DRIVE |
| B — BREATHER PIPE | H — LOWER CRANKCASE |
| C — WATER OUTLET ELBOW | I — INJECTION PUMP |
| D — INJECTION NOZZLE | J — FUEL SUPPLY PUMP |
| E — GOVERNOR | K — AIR COMPRESSOR |
| F — OIL LEVEL GAGE | L — COMPRESSOR AIR CLEANER |

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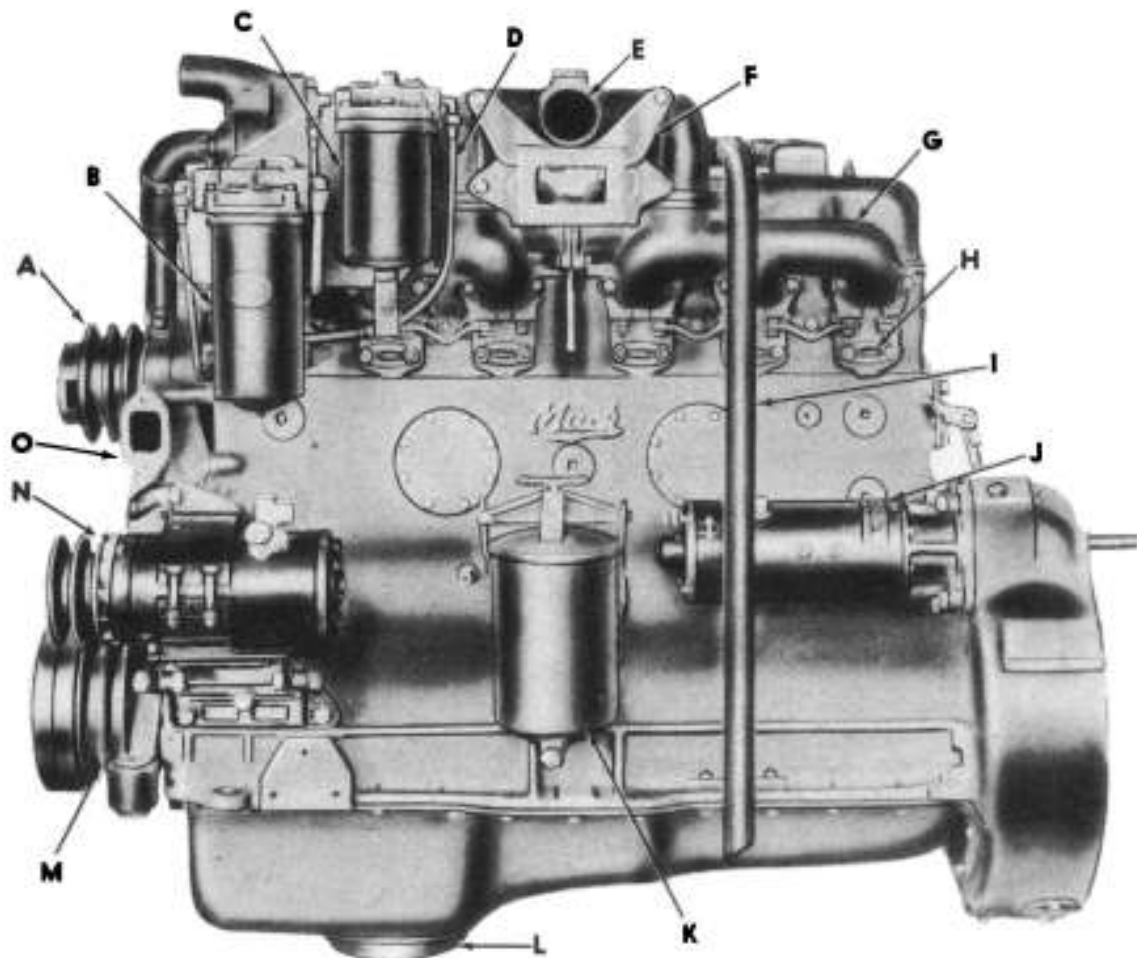
Figure 1—Right Side of Engine

3. DESCRIPTION AND OPERATION.

a. **General** (figs. 1 and 2). The engine is a six-cylinder, four-cycle, valve-in-head, solid-injection, diesel type, with the cylinders and upper crankcase in one vertical block. Being of the full-diesel type, the engine has its fuel injected directly into the combustion

DESCRIPTION AND DATA

chamber, and the heat of compression causes ignition. In conjunction with the nozzle action and the lobed combustion chamber, the energy cells (air cells) control the combustion, thereby prolonging the power impulse, which results in smooth running. The cylinders are numbered from 1 to 6, starting at the front or timing gear end. Crankshaft rotation is clockwise as observed from the front. References to "right side" and "left side" apply to the engine as observed from the rear or flywheel end.



- | | |
|---------------------------|------------------------|
| A — FAN PULLEY | I — AIR BREATHER PIPE |
| B — FUEL OIL FILTER NO. 2 | J — CRANKING MOTOR |
| C — FUEL OIL FILTER NO. 3 | K — OIL FILTER |
| D — FUEL LINE | L — OIL SUMP |
| E — AIR INTAKE | M — FAN DRIVING PULLEY |
| F — AIR CLEANER BRACKET | N — GENERATOR |
| G — INTAKE MANIFOLD | O — WATER PUMP |
| H — ENERGY CELL CLAMP | |

RA PD 310697

Figure 2—Left Side of Engine

b. **Cylinder Block** (figs. 3, 4, and 5). The cylinder block is cast of a special alloy iron and has replaceable, "dry-type" cylinder sleeves or liners pressed into the cylinder bores. Water jackets extend the full length of the cylinders.

c. **Cylinder Heads and Valves** (figs. 3, 4, and 5). These are two

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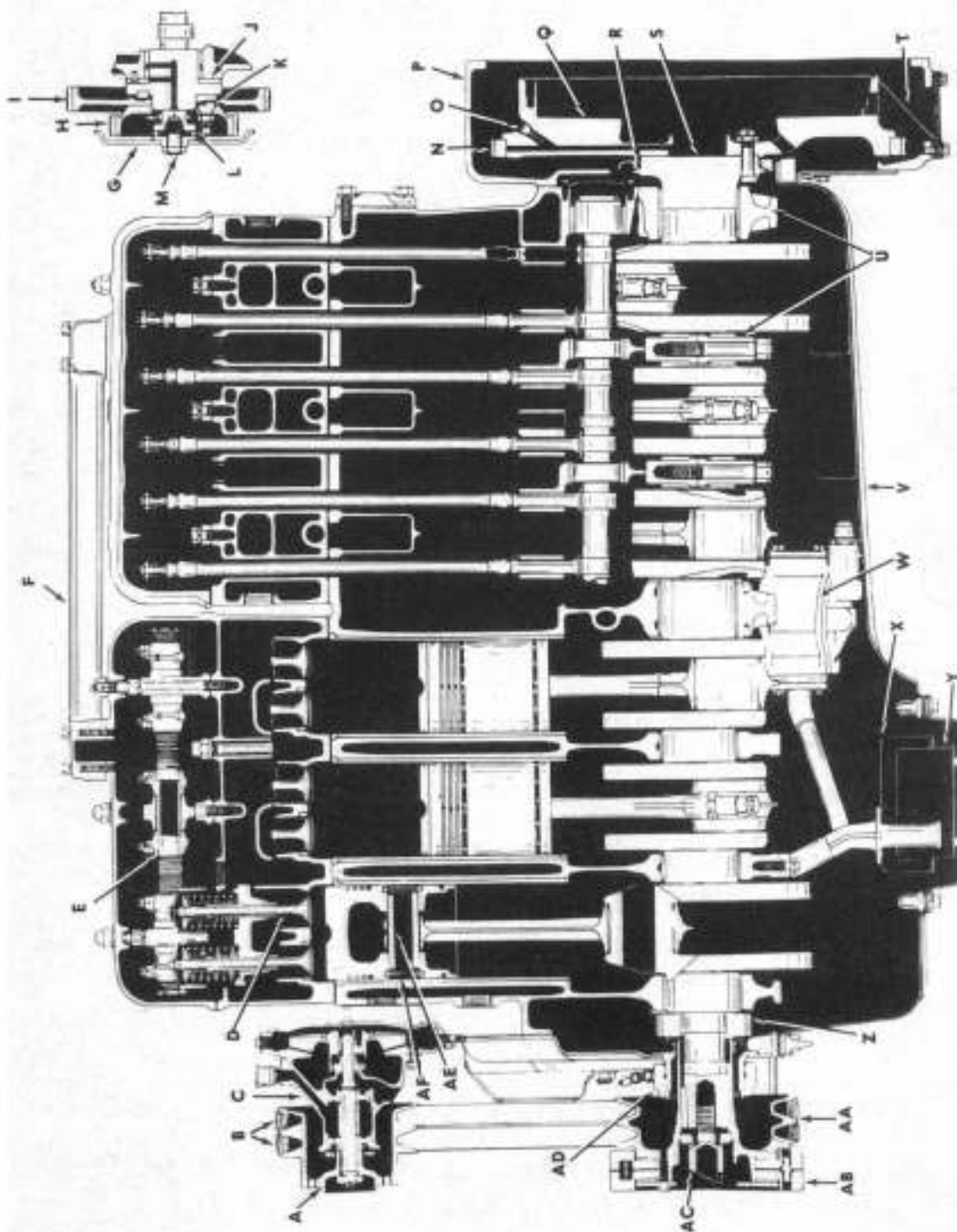


Figure 3—Longitudinal Cross-section of Engine

DESCRIPTION AND DATA

A —	FAN HUB	Q —	FLYWHEEL
B —	FAN BELT	R —	OIL SLINGER HOUSING
C —	WATER PUMP	S —	CRANKSHAFT
D —	INLET VALVE	T —	TIMING INDICATOR
E —	ROCKER ARM SHAFT	U —	BEARING CAP
F —	CYLINDER HEAD BREATHER PIPE	V —	LOWER CRANKCASE
G —	CRANKCASE GEAR COVER	W —	OIL PUMP
H —	INJECTION PUMP DRIVE GEAR	X —	OIL PUMP SCREEN SHIELD
I —	TIMING (CAMSHAFT) GEAR	Y —	OIL PUMP SCREEN
J —	CAMSHAFT THRUST WASHER	Z —	TIMING (CRANKSHAFT) GEAR
K —	INJECTION PUMP TIMING ADJUSTMENT	AA —	FAN DRIVING PULLEY
L —	CAMSHAFT THRUST BUTTON	AB —	VIBRATION DAMPER
M —	CAMSHAFT THRUST SCREW	AC —	STARTING CRANK JAW
N —	FLYWHEEL STARTER GEAR	AD —	ENGINE FRONT SUPPORT
O —	GREASE HOLE PLUG	AE —	PISTON PIN
P —	ENGINE REAR SUPPORT	AF —	PISTON PIN SNAP RING

RA PD 310671B

Legend for Figure 3—Longitudinal Cross-section of Engine